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ABSTRACT

A study was conducted to test the effectiveness of four instructional strategies on students' writing. Students, 138 fourth, sixth, and eighth graders in a semi-rural school district in southern California, were instructed in informational writing through one of four instructional strategies: (1) presentation of model pieces of writing; (2) presentation of scales, questions, and criteria to guide writing; (3) presentation of both model pieces of writing and scales, questions, and criteria; and (4) free writing. The assessment included two scoring procedures, a holistic and an analytical evaluation. An unexpected finding of the study was the effectiveness of free writing, especially with below-average readers. Children reported that their problems in composition were mainly problems of finding content for the text they generate, not of finding language to express the content. A picture prompt helped provide the content for the free writing activities and the students developed general fluency in writing. Such an opportunity to write may increase their awareness of text production from sentence level to text level. (One table of data and 19 references are attached.) (MG)

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Teaching Children to Write: Informational Writing

Research Report

Ruth E. Knudson

School of Education

University of California, Riverside

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Teaching Children to Write: Informational Writing

Variations in Student Writing

It is generally agreed that writers vary in their ability to write in response to different writing tasks (Braddock et al., 1963). Support for the statement that students differ in their ability to write in response to different writing tasks is provided by the results of the National Assessment of Educational Progress (NAEP). It is suggested by those interpreting the results (Applebee et al., 1986) that students at different grade levels perform differently for different writing tasks. For informative writing, 59 to 65 per cent of eleventh grade students wrote adequate descriptions based on familiar, relatively simple information or experiences. However, only 32 per cent wrote an adequate description of a modern painting. Informative writing that required analysis was much more difficult. Eighty per cent of students provided at least minimally acceptable responses. However, even at grade eleven only seven to 25 per cent provided adequate responses to these tasks.

In addition, NAEP results indicated that student performance on persuasive writing tasks was very poor. Between nine and 36 per cent of eleventh-grade students, across eleven tasks of varying difficulty, wrote unsatisfactory responses and less than three per cent wrote elaborated responses. The majority of students wrote persuasively at the minimal level or better. However, fewer than one-third can do so at the adequate level or better. Fourth grade students also performed poorly on these tasks. Between 27 and 47 per cent wrote unsatisfactory papers and fewer than two per cent write elaborated papers.

With respect to imaginative writing, it was found that two-thirds or more of the students in fourth grade understood the basic requirements of story writing and displayed at least minimal storytelling skills in response to story tasks. Few fourth-grade students wrote fully adequate stories. However, writing skills showed continued improvement at grade eight and modest additional improvement at grade eleven. When students could not rely upon story frameworks, however, their imaginative writing was less successful. At grade eleven, only 18 per cent wrote adequate responses to non-story imaginative writing. Eighth graders did better on this task than fourth graders, but there was no improvement between eighth grade and eleventh grade.

Four Types of Knowledge

Although there are many reasons for writers' varying in their ability to write, factors include some writers being more aware of the form a piece should take and how the composition should be developed. It has been suggested by Hillocks (1987) that writing demands at least four types of knowledge: knowledge of the content to be written about; procedural knowledge which enables the manipulation of content; knowledge of discourse structures; and procedural knowledge which enables the production of a piece of writing of a particular type.

School-based writing instruction frequently assumes the student has the knowledge of the content to be written about, or, the objective of the writing assignment may be to assess the student's knowledge, e.g., an essay test. It has become apparent to those concerned with wide-scale writing assessments that the topic may exert considerable influence over the student's ability to

express him/herself. For this reason, topics for wide-scale writing assessments are carefully selected and field-tested. For example, a student who may have difficulty with the topic, "Explain to an exchange student from Brazil how to play basketball", may be able to respond successfully to the topic, "Explain to an exchange student from Brazil your favorite sport."

Procedural knowledge which enables the manipulation of content requires the writer to know how to implement the composing process in terms of prewriting, composing, revising, and editing. For instance, it is helpful to a writer to learn to revise globally before proofreading for sentence-level errors.

Knowledge of discourse structures refers to the writer's understanding of narration, description, argumentation/persuasion, and informational/expository writing and the ability to develop a composition within the structure.

The fourth kind of knowledge, according to Hillocks, is procedural knowledge which enables the production of a piece of writing of a particular type. This description refers primarily to the writer's ability to integrate his content knowledge, his knowledge of manipulating content, and his knowledge of discourse structures with self-accessing behaviors to produce connected discourse.

Effective Instructional Strategies

Although effective instructional strategies have been identified with respect to narrative writing (Scardamalia & Bereiter, 1986), research efforts have not been as successful in determining the effectiveness of instructional strategies in teaching knowledge of other discourse modes. In attempting to

identify effective strategies, it is useful to consider Scardamalia and Bereiter's (1986) categorization of approaches to writing instruction into four groups. First is strategy instruction, which involves presenting writing to students as a cognitive process. Strategy instruction would include both teaching students the process of writing (e.g., prewriting, composing, revising, editing, publishing) and elaborate instruction in one particular area (e.g., methods of revision).

Second is procedural facilitation (a term developed by Scardamalia and Bereiter), which involves helping students by providing them with external supports. For example, providing students with a picture and asking them to write about the picture is a form of procedural facilitation. Students have been assisted by being given help with the content of the essay. However, the teacher does not enter into the task as a collaborator.

Third is product-oriented instruction, which helps students gain a clearer knowledge of goals to attain. One of the most successful forms of product-oriented instruction is presentation of model pieces of writing. Students are presented with examples of "good" writing and usually given opportunities to imitate the writing.

Fourth is inquiry learning, which helps students through exploration and guided discovery. This method of instruction includes presenting students with data sets and teaching them how to use the basic strategies of inquiry (observation, description, comparison and contrast, definition, generalization, and the testing of generalizations against further data).

Interestingly, Hillocks' (1984) extensive review of the research literature identifies six foci of instruction in teaching writing: traditional

grammar; sentence combining (where two simple sentences are combined into one more complex sentence); presentation of model compositions; use of scales, questions, and criteria to guide writing; inquiry; and free writing. Hillocks concludes (1984):

(1) The study of traditional school grammar has no effect on raising the quality of student writing;

(2) The emphasis on the presentation of good pieces of writing as models is significantly more useful than the study of grammar, but the treatments that use the study of models almost exclusively are less effective than other available techniques;

(3) Free writing is more effective than teaching grammar in raising the quality of student writing, but less effective than any other focus of instruction;

(4) Sentence combining is twice as effective as free writing as a means of enhancing the quality of student writing;

(5) The use of scales/questions/criteria is two times more effective than free writing techniques; and

(6) Treatments including inquiry are nearly four times more effective than free writing and are two-and-one-half times more powerful than the traditional study of model pieces of writing.

Discourse Modes

There is a considerable research and theoretical base for the teaching of written composition by discourse modes. Actually, five discourse modes are put forth in Alexander Bain's nineteenth century college textbook English Com-

position and Rhetoric: description, narration, exposition, persuasion/ argumentation, and poetry (Connors, 1983). Composition instruction has frequently been based on this model. Other composition models are proposed, including the current emphases on the aims and purposes of discourse.

One term, "schema", needs to be clearly defined at this point. A schema is like a concept, but broader. One's schema for any given thing includes the concrete parts of the thing as well as behavioral sequences and experiences. A schema is an abstraction of experiences. Since new experiences occur, schemas are constantly being restructured according to new information you receive. For example, most of us have a schema for "school". We may think of desks, chairs, tables, laboratory equipment, libraries, teachers, students, and books. We also probably think of what we wear, how we behave, how long we spend there, what we learn, and so on. As we have new school experiences, our schema for "school" changes. Schema is sometimes defined as the mental structure of a person's concepts about a phenomenon, based on both real and imaginary (vicarious) experiences.

Schema theory is important to an understanding of discourse structure. Each mode of discourse is thought to have a particular form, method of development, purpose, and so on. Scardamalia and Bereiter (1986) point out that most research on discourse (writing patterns) schema knowledge in children is concerned with narration. They suggest that children have a good understanding of what narration (storytelling) is, that the understanding by children of narration is similar to what adults think constitutes a story and what are its natural elements. However, children do not have the same understanding of

description, argumentation/persuasion, or information/exposition. There is some evidence that children need to have more experiences with oral language before they attempt to compose in writing in these discourse structures. Description usually refers to writing whose primary purpose is to describe a person, thing, event, place, and so on. Argumentation/persuasion refers to writing that attempts to convince an audience of a thesis or point of view. Exposition frequently refers to writing that informs its audience. For this reason, it is frequently referred to as informational writing. It is the kind of writing frequently encountered in school, particularly in content area instruction. Raphael, Englert, and Kirschner (1989) suggest that children in the upper grades of elementary school may decline in their ability to progress in writing partly because they are not taught how to read and learn from informational or content area texts, which are important instances of informational (expository) writing. Their hypothesis and results support Flood and Lapp's (1986) analysis of the content of basal readers pre-primers through sixth grade. They (Flood and Lapp, 1986) found that 65 percent of the selections and 72 percent of the pages of text contained narratives or poems. Expository text was more common past the third readers, increasing from five percent of the selections in the preprimers to 21 percent of the selections in fourth readers. Instruction in informational reading and writing is critical for school success, particularly in the content areas.

Global Writing Competence

Global writing comptence refers to one's ability to construct text. It is frequently contrasted with word and sentence level skills, like spelling,

capitalization, and punctuation. Although word and sentence level skills are important, different skills are involved in more global writing ability. For example, organization of an essay is critical to the effectiveness of its communicative ability. The foci of instruction identified by Hillocks (1984) refer to both word and sentence level skills and global writing competence. Sentence combining and traditional grammar instruction are directed at word and sentence level skills; presentation of model pieces of writing may be used to improve both word and sentence level skills and global competence; free writing is often assumed to be directed at the improvement of global competence, but may actually improve word and sentence level skills as well; the use of scales, questions, and criteria and inquiry are directed at teaching strategies for global competence as well as word and sentence level skills.

Instruction and learning of discourse structures is directed at global writing competence. Global writing competence has assumed new importance in reading and writing because of society's expectations of writing competence, which have shifted from technical correctness to text readabilty and informational adequacy. This change in emphasis from word and sentence level skills to more global writing ability is part of the trend in occupations toward processing information, not material.

Recent developments in cognitive learning theory suggest that the teaching of composition is best organized along a continuum from purely oral to purely written communication. Bereiter and Scardamalia (1982) theorize that there are transitions in learning to write, where "writing" is defined as the process of composing texts which are intended to be read by an audience that is

not present (Bereiter and Scardamalia, 1986). They suggest that a first major transition in learning to write is from oral to graphic expression, while a second is from face-to-face communication to communication with a remote audience. The third transition in learning to write, according to Bereiter and Scardamalia (1982), is the transition from a language production system which depends on conversational turns with a partner, to one which can function autonomously without a partner's assistance. With written composition, conversational supports are removed, making written composition not only a different process from conversation, but much more difficult. The importance of this difference becomes apparent when speaking and writing are compared in continuous discourse (e.g., several connected words or sentences).

Language specialists and English educators often do not focus their studies or suggested teaching strategies on this global difference between conversation and composition. Instead, school approaches to teaching writing frequently focus on the level of the sentence, assuming that competence in written composition results from incorporating new rules into intact (verbal) language systems. These new rules usually have been unique to writing, such as spelling and punctuation, syntax, and form and content of genres (types, e.g., narration, exposition, etc.) of written composition. These school approaches are often misdirected and should focus instead on instructing writers to reconstruct oral language production autonomously instead of interactively.

From Conversation to Composition

If Scardamalia and Bereiter are correct and the first step in learning to write is movement from communication with a face-to-face audience to communi-

cation with a remote audience, then the writer must be capable of communicating with the face-to-face audience. This form of communication is probably oral language interchange, or conversation. In fact, this is the case with Scardamalia and Bereiter's theorizing about the nature of knowledge of and application of discourse theory. They introduce a distinction between relatively open and relatively closed discourse schemata. This referral to schemata is related to the concept of schema. In fact, it refers to the assumption that discourse production is directed by some schema which specifies the kinds of things to be said and the relationship between them. Discourse schemata are defined as "open" or "closed" depending on the extent to which social turn-taking provides specific instances of the type of things represented in a given schema.

Narrative schema is relatively closed. Although inputs from conversational partners may influence the amount of elaboration and style of delivery, it contains a system of internal requirements that must be met by the speaker. The schema for giving directions and information is relatively closed, but not as closed as those for narrative. The conversational partner may take a more active role for assistance than the partner in narrative oral discourse, but the speaker's own knowledge of the activity determines the elements and their order in instruction and direction giving.

Examining persuasive or argumentative discourse with respect to being "open" or "closed" clarifies that these terms do not imply that one is superior to the other. Arguing orally is open to the extent that there are inputs from the conversational partner. An argumentative essay is closed in that there are no inputs because there is no conversational partner.

Written discourse schemata are closed (Bereiter and Scardamalia, 1982). Children already have a number of oral discourse schemata when they begin learning to write, but learning to write implies that children must develop new, closed schemata to direct their written composition. It has been hypothesized that children will adapt their existing oral discourse schemata to writing most easily for those schemata that are relatively closed and hardest for those that are relatively open.

Report of Research Study

The purpose of the experiment was to test the effectiveness of four instructional strategies on students' writing. Students were instructed in informational writing through one of four instructional strategies: (1) presentation of model pieces of writing, which focused on the "product" of good writing; (2) presentation of scales, questions, and criteria to guide writing by explicitly stating to students the criteria for good writing while they engaged in all parts of the composing process; (3) presentation of both model pieces of writing and scales, questions, and criteria, a combined approach which focused on both product and process strategies; and (4) free writing, which focused here on providing a form of procedural facilitation (providing students with external supports) in that students were presented with pictures and asked to write about them.

Informational writing was taught to 138 fourth, sixth, and eighth grade students in a semi-rural school district in southern California. Fifty-four per cent of the students were girls; 46%, boys. Sixty-eight per cent of the students were Anglo; 24%, Hispanic; 4%, Black; 2%, Oriental; 2%, other.

Results of statistical tests (nonorthogonal repeated measures analyses of variance) indicated significant effects for treatment and reading level with informational writing. The most effective strategy was presentation of model pieces of writing, followed by free writing. Although above average readers wrote significantly better than below average readers, for the free writing group both above and below average readers wrote at about the same level for both writing samples. (See Appendix A for means and standard deviations. Contact the author for more information on the statistical analysis.)

DISCUSSION: RESEARCH INTO PRACTICE

The Effectiveness of Models

The success of model pieces of writing as an instructional strategy is borne out, at least in part, by past experience and research. One of the oldest, if not the oldest way, to teach children to write is by presenting them with model pieces of writing. It is assumed that students somehow will be able to transfer what they see in the model to their own writing. Instruction using model pieces of writing involves connections between reading and writing. Much of what students learn about writing results from exposure to examples (Smith, 1982). Knowledge is somehow obtained from reading the examples; reading usually gives no clue to the process through which the author works to create the literary work. It is assumed that knowledge of writing through reading necessitates a directing of attention, separate from that required to comprehend the text. There is little research on how students extract literary knowledge from examples, although it is known that students from third grade up can extract knowledge of literary features from model texts (Scardamalia and Bereiter, 1986).

Studies which find that presentation of model pieces of writing are effective in improving student composition have several common characteristics and draw similar conclusions. Thibodeau (1964), Pinkham (1969), Andreach (1976), Wood (1978), and Laurencio (1984) all find that teaching with literary models increases students' organization and may result in improvement in the mechanics of writing.

The Effectiveness of Free Writing

An unexpected finding of this study was the effectiveness of free writing, especially with below average readers. In this experiment, pictures served as prompts for the writing. Children report that their problems in composition are mainly problems of finding content for the text they generate, not of finding language to express the content (Bereiter and Scardamalia, 1982). The picture prompt helps provide the content for the free writing activities and the students develop general fluency in writing.

The effectiveness of free writing as an instructional strategy is probably due to the fact that practice in free writing increases general fluency in writing. Since it is so very effective for low readers, there are important implications for permitting these low-achieving students, often grouped into "competency" classses, to practice writing without traditional remedial instruction. Such an opportunity to write may increase their awareness of text production from sentence level to text level.

Evaluation

The assessment employed in this study included two scoring procedures. The first was holistic in Cooper's (1977) use of the term "holistic" to mean

any procedure which stops short of enumerating linguistic, rhetorical, or informational features of a piece of writing. The holistic scoring here did not require an enumeration of any features. It was similar to a Primary-Trait (Lloyd-Jones, 1977) assessment, however, in that the purpose for the writing, its audience, and the degree to which the task was addressed were considered.

The second evaluation was essentially analytic in nature and was a modified version of Diederich's (1974) classic scale. With Diederich's scale, raters evaluate an essay with respect to eight points. Six points were considered in this study: clarity; organization; coherence; punctuation; spelling; and word choice. (See Appendix A for a description of the scoring guides.)

Teachers may wish to assess student writing holistically, with respect to Primary-Traits, or analytically. Both the California Assessment Program (CAP) and NAEP employ holistic assessment, along with other methods. Holistic and Primary Trait assessment may direct both the teacher's and students' attention toward overall organization and purpose -- general text level fluency -- as opposed to an emphasis on word and sentence level skills.

Conclusion

It is definitely desirable that more be learned about children's acquisition of writing skills. There may be a developmental hierarchy of discourse modes, proceeding from narrative writing to descriptive writing, to informational writing, to persuasive writing. Likewise, it is possible that students need to develop general fluency skills, more complex word and sentence level skills, and knowledge of discourse structures. General fluency may best be

taught by providing directed free writing activities (directed in the sense that the writing prompt provides content so students do not have to search for knowledge of the content and of the form). Word and sentence level skills may be taught next through sentence combining, and knowledge of discourse structures may be taught through presentation of model pieces of writing. The more sophisticated strategies involved with revision may be taught through use of scales, questions, and criteria to guide revision. However, knowledge about writing instruction is not to the point where such a sequential model for instruction can be proposed with a research base as its foundation.

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Appendix A

Table 1 Means and standard deviations for the holistic score by treatment by reading level, informational writing

Test	N	Mean	Standard Deviation
Treatment 1 (Presentation of Model Pieces of Writing)			
Above Average Reading Level			
Holistic 1	13	9.23	1.88
Holistic 2	14	8.50	2.10
Below Average Reading Level			
Holistic 1	11	6.18	1.60
Holistic 2	10	6.40	1.07
Treatment 2 (Presentation of Scales/Questions/Criteria)			
Above Average Reading Level			
Holistic 1	13	7.08	1.50
Holistic 2	13	7.62	1.85
Below Average Reading Level			
Holistic 1	13	6.00	1.47
Holistic 2	12	5.50	1.31
Treatment 3 (Presentation of Models and Scales/Questions/ Criteria)			
Above Average Reading Level			
Holistic 1	15	7.66	2.02
Holistic 2	14	7.00	1.52
Below Average Reading Level			
Holistic 1	12	6.17	1.03
Holistic 2	11	5.09	0.94
Treatment 4 (Free Writing)			
Above Average Reading Level			
Holistic 1	11	8.00	2.72
Holistic 2	10	7.30	2.06
Below Average Reading Level			
Holistic 1	11	6.45	1.75
Holistic 2	12	7.50	2.61

About the Author

Ruth Knudson received an A.B. in English and Philosophy from Bryn Mawr College; an M.S. in Educational Psychology from the University of Wisconsin, Madison; and a Ph.D. in Education from the University of California, Riverside, where she is currently an Assistant Professor of Education.

Dr. Knudson holds both California Multiple Subjects (elementary) and Single Subject (secondary) teaching credentials. She taught in the public schools at various grade levels and was a Supervisor of Teacher Education at the University of California, Riverside, before receiving her Ph.D.

In addition to being awarded a Presidential Grant for School Improvement Research Recognition Award by the University of California, the author also received the American Educational Research Association's (AERA) "Outstanding Dissertation Award 1989".

Please address correspondence to:

Ruth E. Knudson
School of Education
University of California, Riverside
Riverside, CA 92521

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